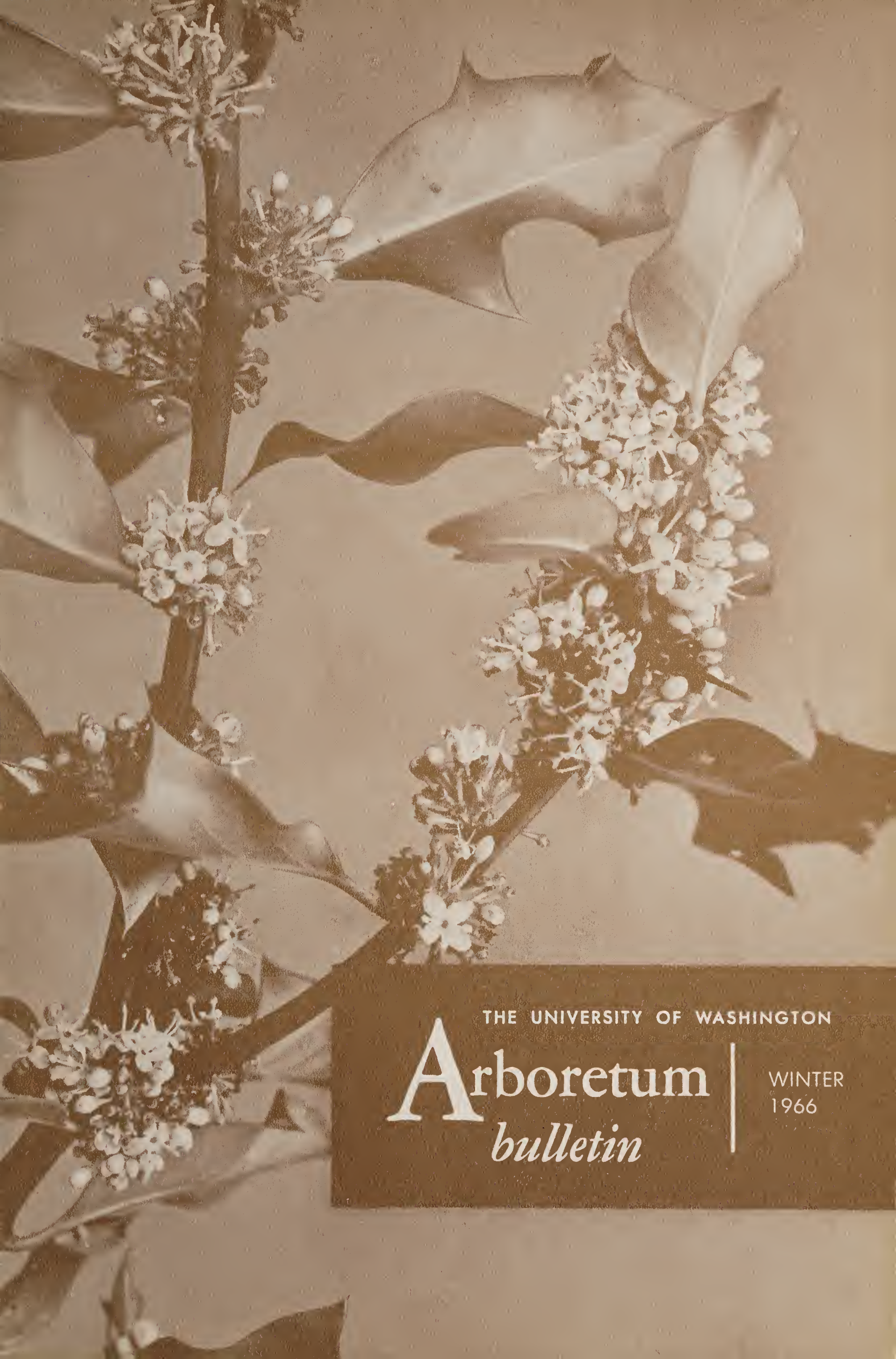

THE UNIVERSITY OF WASHINGTON

Arboretum bulletin

WINTER 1966

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Arboretum bulletin

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COVER PHOTO:

Ilex Aquifolium, a flowering branch

PHOTO BY: DON NORMARK

Our Plant Sale—1966

Doris Butler*

The first week in October has a "D-Day" meaning for many dedicated Arboretum workers. It has special connotations also for gardening enthusiasts throughout the area and from neighboring communities across the mountains and to the south. The annual Arboretum Foundation Plant Sale is the reason for this Fall Madness!

The Plant Sale, put on by the women of the Unit Council each year for the past nineteen years, is the only money making event of the Foundation. Besides raising money to use in assisting in the development and maintenance of the Arboretum, the Sale provides an opportunity for many women to work together sharing mutual interests. In addition, the educational opportunities it presents for members and for the public as a whole cannot be overemphasized.

Perhaps these values can best be illustrated by describing the process by which a plant sale is put together. The sale is broken down into sections of related plant material, rhododendrons, trees and shrubs, etc. For months in advance of the sale, Unit Council women in charge of these sections visit many nurseries taking careful notes regarding available plant material, its quality, size and cost. A concerted effort is made to determine the best varietal forms of plant material by utilizing the finest references available and by consulting knowledgeable personnel in the Arboretum. After considering material to be donated from the Patricia Calvert Greenhouse and from the Arboretum and other sources, orders are placed, and a list of all material to be available at the sale is sent to the Research Committee. This group prepares the Plant List that goes to the public so that they too can be making plans.

When orders have been placed, the tempo begins to quicken. Women meet in small groups to write labels, for each plant carries a label identifying it, giving horticultural data, and other descriptive information that will make its eventual owner a more knowledgeable person in regard to that purchase. Attempts are made to familiarize all sales personnel with the plant material to be available. Other efforts are directed toward informing the buyers. One section this year, for example, gave each worker five unusual plants from the section in which she was to work. She was requested to research thoroughly each plant so that she would be able to inform her customers authoritatively. Another member of that same group made descriptive signs for most of the plant material in the section. If a picture was available, it was added to the 5x6" card on which the description was printed. Both were tacked to a stake which was inserted in the can containing that particular plant.

In the Patricia Calvert Greenhouse, a facility owned by the Unit Council, women work throughout the year, propagating rare and unusual material especially for the sale. In addition to providing much very fine material that would be unavailable otherwise, this facility also helps to make people more knowledgeable and more effective saleswomen at our sale. Finally many members in their own gardens are busy propagating and growing plants that they will donate at sale time.

Nearer the plant sale date, posters are made and distributed in strategic areas. Work parties are held to ball and burlap material. Pricing needs to be done. Plant material must be pleasingly arranged in the sale area.

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*Mrs. (Joseph P.) Butler was our Sale Chairman and certainly deserves everyone's thanks for HER "tremendous spirit" and "dedication."

On the day of the sale, consultants, many of them landscape architects, donate their time to help the patrons with their problems and to advise them about the material which they are buying. The basic philosophy of the plant sale has been to bring together good plant material. Some of this material is new and unusual. Some is difficult to find. All of it is out of the ordinary. Consequently, patrons have come to regard this sale as the best of its kind and one not to be missed.

The recent sale must be deemed one of the most successful that the Foundation has had. More than two hundred people worked in varying capacities in our sale, representing fifty-eight of our eighty-three units. As many as thirty-one headed committees. Many additional people who worked were Foundation members only. Our Personnel Chairman reported that more than one thousand fifty hours were donated; however, many additional hours were contributed for which we have no record. The successful staging arranged for us by two engineer husbands for effective traffic flow and maximum merchandising made it possible to channel one thousand one hundred and fifty eight patrons through four cashier lines in a period of five hours with minimum delay! Our material was sold out before the afternoon was over. After all bills were paid, we were delighted to find that we had netted over $7300.00

Our fine success is due to the tremendous spirit of cooperation that pervaded the entire project. That spirit reflects also the dedication and loyalty of our members and their pride in the great cultural asset which our Arboretum has become.

A glimpse of the eager buyers at the sale happily filling their carts.
Fig. 13 Photo by: Joy (Mrs. Roger) Spurr

A Professional Horticultural Exploration of England and Scotland

J. A. Witt

This "report to the stockholders" could be done in many ways but since it was a very personal experience I choose to present it as a diary of the twenty-one days in June, 1966, that were as crowded as any short period I have ever lived through.

The diary should perhaps start in the spring of 1965 when I received a brochure from the New York Botanical Gardens announcing a Professional Horticultural Exploration of England and Scotland for the next year. This was filed—with a sigh of regret—in the "Tours, commercial" file and promptly forgotten—but only by me! December came around and I was invited to the Arboretum Foundation Board of Director's luncheon meeting where, to my intense surprise and great joy, I was told that the Foundation and the Unit Council had appropriated the necessary funds for me to join the tour. The next six months were full of other surprises in the form of gifts from individuals and Units. I want now to express my most sincere thanks to each and all these fine people and organizations for their assistance and good wishes. In some ways this was the best part of the entire experience.

Loaded down with film, advice, and a minimum of clothes I left Sunday, June 5, for Boston where I spent the next day with Dr. Howard and Dr. Wyman at the Arnold Arboretum, admiring that superb institution's collections. Then to New York for two days and a chance to see the Brooklyn and the New York Botanic Gardens. On June 9 the twenty-one members of the tour group met for the first time at the John F. Kennedy Airport, boarded Pan American Airways flight 100 to London where we were met by our courier, Mr. Rupert Powell and our coach (bus) and its driver, John Hogan, who stayed with us for the entire trip.

June 10

London is not the cool city I expected. Last night was warm and humid. Nor is it especially quiet. At least my room wasn't. Up at seven for an English breakfast, into the coach by 8:30 and then southeast a few miles to our first garden—the Royal Botanic Gardens, Kew. Mr. T. H. Everett, our tour leader and Assistant Director (Horticulture) of the New York Botanical Gardens, was trained here and has kept close contact with the staff, so we were given the real treatment. We met first with Mr. Shaw, Regius Keeper (pro-tem), then were taken to the extensive propagating houses and beds. There appeared to be acres of them, all neatly tended by myriads of gardeners—students in part, we were told, but we saw nothing really new as far as techniques went. Our guide for the day, Miss Angel, a most charming young lady, took charge next and off we trailed, past a warm wall planted with a wide variety of tender shrubs, Ceanothi, *Eriobotrya japonica* and a fruiting specimen of the yellow flowered New Zealand native, *Sophora tetraptera* about 18 feet tall. (We should be able to do that well in the Arboretum but have lost it every time we've put it out . . . why?) The Iris gardens were only slightly past their best and while most of the species were through flowering, the tall bearded varieties were a brilliant splash of color.

The near-by rock garden was very fine, built largely of sandstone and full of well grown and precisely labeled plants. There were streams and pools, slopes in all directions that allowed placement of the plants in sites best suited to them. *Campanula, Geranium,* brooms of several sorts, *Iris,* and many, many other plants were flowering. We should have spent a day in the Rock Garden not just the few minutes available. A most interesting new raised scree bed

built of sandstone blocks to a height of about three feet and about five feet wide serpentined along the south side of a display house. The surface of the soil is covered with crushed rock and many species that require sharp drainage seem to be thriving in it. The lydian broom, *Genista lydia* was especially showy there.

Miss Angel took us, almost at a trot, through the Arboretum area with its sweeping vistas framed by the wonderful old cedars (*Cedrus atlantica* in large part). There was an especially fine collection of oaks, including many evergreen species that I was unfamiliar with. Again we regretted that time was so short that there was none to spare for even a brief look at some unusual specimen. The grounds were so very neat, no litter despite the many visitors, and nearly every specimen was labeled—a gigantic task in itself, as I well know.

Lunch in the refreshment pavillion was leisurely—frustratingly so—then back to the grounds for a dash through the various growing houses. The outside temperature was in the low eighties so I toured the shrub plantings on the walls outside while the rest of the party boiled under glass. There were many Californian and New Zealand shrubs on these warm walls. I was especially taken with a handsome plant of the Chilian *Fabiana imbricata*, a relative of the tomato and potato that looks like a large heather. At about 3:30 p.m. we rejoined the coach. Five hours at Kew, that's not enough time even to see the greenhouses alone!

Just a few random thoughts about this wonderful garden: June is too late to see Rhododendrons, naturally, but we were impressed by the size of the *Rhododendron ponticum* and its hybrids and can well see how it might become the pest it is reported to be here.

There is a sense of openness about the grounds with their long sweeping avenues that are framed by century-old trees. These make the grounds look much larger than the actual three hundred or so acres.

Student gardeners were everywhere. I didn't find the exact number but we saw one bed of less than two hundred square feet that was being planted by six or seven young men and women, probably the most intensively cultivated piece of land in all England!

The age of many of the exotic trees and shrubs was another most impressive thing. I saw the parent of several specimens we are growing in the Arboretum, plants raised from Kew seed.

Our next stop was an unusual one, a visit to the Wilkinson Sword Company where we were given a lecture-demonstration on the development of their fine line of garden tools followed by one of the most elaborate buffet tables I've ever encountered. If this type of hospitality continues I shall return a fat man.

The end of a busy day saw us enjoying the best thunder and lightning storm I've seen since my Montana days.

(To be continued.)

South King County Arboretum Foundation

For some time a group of citizens of the South King County communities have been interested in establishing an arboretum in their area. To further these efforts, a South King County Arboretum Foundation was established and incorporated in October 1965.

In a brochure published by the Foundation, they state:

"The members of this Foundation are motivated by their common concern for the preservation of the natural beauty and resources of our State through the methods of conservation education.

"At the present time there is no formal facility available in the South King County area for the teaching of conservation, other than the naturally wooded tracts surround-

ing our towns. Considering the projected population figures for this region, however, it will not be too long before these lands will be completely industrial or residential areas. In the view of the Foundation, then, the establishment of an arboretum at this time, while the land is still available, would be a significant step toward insuring the future availability of the proper facilities for conservation education and recreation.

"The Foundation has, therefore, undertaken the project of establishing such an arboretum facility in the South King County area. Such an arboretum would be dedicated primarily to the teaching of conservation of natural resources. It is the hope of the foundation that such a facility could and would be used by the entire population of this region as an area of outdoor recreation and learning.

"The plans of the Arboretum Foundation call for a naturally wooded tract of some forty to fifty acres. A varied terrain, featuring hills and valleys, level areas, and a stream or creek, would be most desirable. Within this area much of the natural vegetation would be retained, with only a minimum amount of clearing necessary. Certain selected areas would be cleared of underbrush to facilitate the introduction of varied plant forms to complete the selection of trees and flowers growing in the arboretum.

"If a stream or creek is available, it is hoped that a pond, or a series of ponds, could be created to provide a natural setting illustrating the ecology found in such an environment. Animal as well as plant forms would be included.

"Throughout the arboretum a network of trails and paths would be provided to allow visitors maximum access to the various areas and displays of the arboretum. Centrally located would be a meeting and lecture hall with parking facilities. This would provide a starting and finishing point for excursions through the arboretum. The hall would be utilized for meetings, lectures, displays, and as a refuge in case of bad weather. Greenhouse and laboratory facilities will be provided for dealing with various plant problems.

"When the plans of the Foundation are realized, the arboretum will be open to everyone, free of charge, for outdoor education and recreation. As a facility for conservation education, it will serve the school population of the entire surrounding area. This will include Kent, Auburn, Renton, Maple Valley, Black Diamond, Federal Way, South Seattle and any other school districts expressing a desire to use the facility. At the present time this includes over 70,000 pupils from kindergarten through Grade 12. Outdoor classes in the natural sciences, conservation, fire and flood prevention, fish and game management, will be taught in a natural laboratory setting. The learning experiences will not necessarily have to be confined to simple observation, as it is the intent of the Foundation to allow actual experience in using the facilities for planting and propagating various trees, shrubs, and flowers.

"In addition, any college or university desiring to do so will be welcome to use the arboretum for scientific studies associated with conservation, forestry, ecology or any other discipline for which the arboretum could serve a useful purpose.

"As a recreation facility the arboretum will serve the surrounding communities as an area for hiking, nature study, photography, plant and animal identification, and just plain aesthetic enjoyment. In addition to the present adult population of over 280,000, it is envisioned that such varied groups as 4-H clubs, Girl and Boy Scout troops, Audubon Society groups, garden clubs (of which there are more than forty in this area), church groups, the handicapped, and senior citizen groups, will benefit from such a facility.

"Thus the arboretum will offer a wide range of activities and services to the surrounding communities. As a center for education, information, recreation, and re-

(Continued on Page 98)

A Visit to the Santa Barbara Botanic Garden

Mrs. Allen B. Engle*

The State of California is rich in legend and lore. When the founders of Santa Barbara Mission looked for a site on which to build a dam for their water system, they selected what has since become known as Mission Canyon. Here, in 1807, the Indians constructed a dam, with an old Roman-type aquaduct across the canyon. Made of adobe clay with ground sea shells used for cement, old Mission Dam is today intact. Although built in such a primitive manner, it has defied the erosion of time. In this aura of early tradition, the Santa Barbara Botanic Garden, like Phoenix, rises from the ashes of the past. A rugged backdrop is formed by the Santa Ynez Mountains to the East and to the West is the broad expanse of the Pacific Ocean. The beauty of the situation, the luxuriant semi-tropical vegetation, and the historical interest combine to make this Garden unique of its kind.

Located in a boulder-strewn section whose hills are covered with chaparral and pines, the Garden is devoted exclusively to California trees, shrubs and wild flowers. Fifty acres of grounds and more than three miles of winding trails give the visitor ample opportunity to explore this versatile area. Rainfall is infrequent here with long periods of drought. Fifteen or twenty inches of rain may fall at one time which floods the canyon and inundates the area. But without this life-giving rainfall, the Garden would be devoid of its beauty. With its widely varying climates, California has over five thousand species of native flora. As many of these species as will grow well are brought together in the grounds. The Garden is perhaps most attractive in the Spring but as a result of an increase in the use of late-blooming genera, visitors find the summer and fall of equal interest.

Early in the spring, the Wild Lilac (*Ceanothus spinosus*) covers the hills with masses of blue flowers; also the Bigpod Ceanothus (*Ceanothus megecarpus*) is abundant. Numerous hybrids of Ceanothus have found value as garden plants. The genus includes some fifty species ranging from ground covers to small trees is size. Developed in the Garden have been the hybrids, "Blue Cloud", "Mountain Haze" and "Sierra Blue". One of the outstanding Ceanothus selections is named "Far Horizon", seeds of which are distributed to botanic gardens. The Meadow Section of the Garden is splashed with orange California Poppies, Blue Lupine and Gilia. Around the Meadow is a border in the background of which are the California Juniper (*Juniperus californica*), Monterey Pine (*Pinus radiata*) and California Box Elder (*Acer negundo*). Penstemens, Native Buckwheat, Wild Fuschias and Bush Snapdragons add color to the foreground of this border. A small running stream cascading into pools adds a pleasant accent.

The Canyon Section is perhaps the most striking area in the Garden. One descends by a series of steps of hewn rocks along a steep slope to the floor of the canyon. Whereas, the upper level of the Garden is dry and parched-looking under the hot California sun, below, in the recesses of the canyon, a different condition prevails. A small stream of water running along the floor gives shade and coolness. Tracks of small animals, attracted by the water, are seen. Trails lead the visitor along a typical stream bed past shrubs and trees indigenous to this area. These are all well marked for the benefit of layman, as well as scientist. Water flows freely in Mission

*Mrs. Engle has been a long-standing member of the Board of Directors and serves on the Bulletin Editorial Board.

Creek in winter but in late summer is reduced to a mere trickle. However, the moisture is sufficient to supply even large trees with adequate water, in fact growing conditions seem to be ideal. The Coast Redwood (*Sequoia sempervirens*), althought not native to this region, has many fine specimens. The California Nutmeg (*Torreya californica*); the Laural or Bay Tree (*Umbellularia californica*); the Western Sycamore (*Platinus racemosis*); and the rare White Fir (*Abies concolor*) constitute the principal trees growing here. Mosses and ferns of several varieties as well as Oregon Grape (*Berberis aquifolium* or Mahonia, as it is also known), Wild Ginger (*Asarum caudatum*), Evergreen Huckleberry (*Vaccinium ovatum*) grow well on the moist banks of the canyon.

In contrast to the Canyon Section is the Arroyo, a typical dry stream bed. Vegetation along the trail no longer has dark green leaves and many plants die back in the summer drought. Shaded by Coast Live Oaks (*Quercus agrifolia*) on the dry banks of the Arroyo are the small hard-leaved Coffee Fern, the Giant Chain Fern and Bracken. Conspicuous for its beauty is the Canoe Cedar (*Thuja plicata*) used by the Indians for dugout canoes; Monterey Cypress (*Cupressus macrocarpa*), unlike the Coastal trees, bent and gnarled, grows upright; Lawson Cypress (*Chamaecyparis lawsoniana*); to mention a few. The Elderberry (*Sambucus mexicana*) was called the tree of music by the early Indians who made flutes of the branches. The berries are an important food source for birds. Wooly Blue Curl (*Trichostema lanatum*) thrives on the dry sunny banks.

The Desert Section, located in full sun on the upper level of the Garden, has plants from arid regions, yuccas, cacti, desert trees and flowers. Many specimens have been brought from the Colorado or Mojave Deserts. These desert plants refute the notion that a desert is incapable of supporting life or vegetation. The cacti have unusual shapes due to their thick stems which contain abundant water storage. Prickly Pear of India Cactus (*Opuntia megacantha*) and Jumping Cholla (*Opuntia bigelevii*) like most of the Cactus family have small leaves often reduced to mere spines. The Indians made cloth and sandals from a variety known as Pencil Cactus. There is also the Sweet Acacua (*Acacia farnesia*); Wild Grape (*Vitus gardiana*); St. Catherine's Lace (*Erigonium giganteum*); and the Joshua Tree (*Yucca brevifolia*).

One of the most helpful ways in which the visitor may learn about the Garden is information provided concerning the plants displayed. Along the Nature Trail, some forty odd specimens are well identified. One may compare the moisture-loving plants of the Canyon Section with those of the Arroyo. The plants and animals in their natural setting illustrate the interdependence of different elements and the functioning of the community as a whole. Brown-colored rocks seen frequently along the trail are blocks of Eocene Sandstone. They were formed by sediment carried by rivers and deposited in the sea. On the surface of these ancient rocks sufficient soil sometimes collects to support a colony of ferns and lichens. Against one rock, the Matilija Poppy, with its spectacular white blooms, grows profusely. The large size of the flowers and their paper-like texture make them popular for cultivation.

The interest and efforts of many people have built the Garden as it is today, a progressive institution serving as a cultural asset in the entire Santa Barbara region. In addition to providing pleasing areas of recreation, a botanic garden is a center for the accumulation of information concerning plants. Questions about the flora of the region, the history and uses of certain plants and dates of flowering are answered by the members of the staff. There is a fine library, an herbarium of twenty thousand specimens, and an Information Center. A new manner of identifying plants

(Continued on Page 101)

Arboretum Plant Collections
V. Hollies genus *Ilex* L. (1753)

The Holly collection has been discussed twice before in this Bulletin, (Winter 1952, p. 17 and Winter, 1961, p. 105) where its history and descriptions of some of the better and more interesting plants were given. This is the first complete listing of all the *Ilex* in the Arboretum and includes those few that are planted in the Japanese Garden, the office-greenhouse area and Rhododendron Glen.

There are 25 species and botanical varieties represented plus 80 cultivated forms and miscellaneous hybrids. In addition there are perhaps another thirty awaiting planting.

The names of the cultivars of *Ilex Aquifolium* and *I. x altaclarensis* follows that of the *Handbook of Hollies* which places all these under *Ilex Aquifolium.* This seems a simpler treatment than attempting to sort out the two forms which are so very similar and which intergrade into each other.

Ilex Aquilfolium L. (1753)

English holly Europe, N. Afr., W. Asia
Seattle garden (1938 plant) Collection 3/49, now 16 ft. tall. There are numerous other specimens of this most common of all hollies in the Arboretum, many of which are bird-spread seedlings. There are numerous cultivars of this species and several hybrids in collection.

'Alcicornis'
Wilmat Holly Co., Pa. (1950, plt.); Collection, pltd. 11/57; now 9 ft. tall.

'Angustifolia'
Source unknown. Pltd. 3/49, average height 15 ft. Outstanding because of its narrow habit and slender leaves; female but shy fruiting.

'Argentea Marginata'
Private garden (1940, plts.); private garden, (1947), cuttings) Collection, 3/49 & 11/52. Now average 10 ft. tall with a range of 8 to 14 ft. This is the commonest of the silver-variegated forms and fruits very well.

'Aurea Marginata'
Private garden (1952, scions). Collection 3/57 and 12/58, now 5 to 6 ft. tall. The golden margined holly; a handsome female form with bright red fruit.

'Aurea Regina'
Source unknown (1940, plts.); Kingsville Nursery, Md. (1949, plts.) Collection 4/49; 11/49; 1/52. Average about 10 ft. tall, 6 to 12 ft. This is also known as 'Golden Queen' and 'Golden King'; a male with deep golden margins.

'Bacciflava'
Private garden (1942, scions). Collection 3/49, now 15 ft. tall. Also known as 'Fructulutea'. A striking female form with bright golden yellow fruit.

'Camelliaefolia'
Seattle garden (1941, plts.); Kingsville Nursery, Md. (1948, plts.) Collection 3/49 & 11/49. All average 18-19 feet. One of the most striking of the large-leaved hollies, very vigorous with big red fruit somewhat sparsely borne. This is often considered to be an **I. 'Altaclarensis'** form.

'Chambers'
W. J. Clarke Nursery, San Jose, Calif. (1952, plts.) Collection 11/57 & 12/58; now 7-8 feet tall.

'Ciliata Major'
Wilmat Holly Co., Pa. (1950, plts.) Collection 3/54. 10 feet tall. A tree of good compact habit and foliage with fierce spines.

'Crispa'
Kingsville Nursery, Md. (1952, plts.) Collection 11/57. 3-1/2 ft. tall. This is the screw-leaved holly with twisted and otherwise contorted leaves. It seems to be very slow growing.

'Deluxe'
Oregon State University (1958, plts.) Collection 12/65. 7 ft. tall. An introduction from the Teufel Nursery in Oregon, with large red fruit.

'Eldredge'
Kingsville Nursery, Md. (1948, plts.) Collection 10/49. Now 17-18 feet tall. A shy but large fruited female with large dull green leaves and very vigorous habit. This is often considered to be an 'Altaclarensis' form and may be the same as 'James G. Esson'.

'Ferox Argentea'
Variegated Hedgehog holly. Bellevue, Wash. garden (1947), scions) Collection 11/52. 6-9 feet tall, A very unusual foliage form with spines on the surface of the leaf as well as on the margins and variegated silver and green. It is male. Also known as 'Ferox Variegata'.

The fifth in this series: MAPLES, MAGNOLIAS, BIRCHES, and PINES have been previously recorded.

'Firecracker'
Dr. J. H. Clark, Long Beach, Wash. (1951, plts.) Collection 10/53. 9 ft. tall. An introduction from Brownell Holly Forms, Milwaukie, Ore.

'Fisher'
Wilmat Holly Co., Pa. (1950, plt.) Collection 11/52. 10 ft. tall.

'Fox'
Wilmat Holly Co., Pa. (1950, plt.) Collection 3/54. 10 ft. tall. Also called 'Foxii'.

'Fructu Aurantiaca'
Wilmat Holly Co., Pa. (1950, plt.) Collection 11/52. 7 ft. tall. This is an orange berried female. Not yet fruited here.

'Handsworth'
Wilmat Holly Co., Pa. (1950, plt.) Collection 3/54. 8 ft. tall. Sometimes called *Handsworthensis.*

'Hodgson'
Source unknown (1938). Collection 3/49. Average 22 ft. tall. This plant is probably wrongly named. Our records show it was received as seed from the Yu collection (Yu 13529) through the Arnold Arboretum in 1938. The plants are obviously not of Chinese origin, hence there must have been a mix-up somewhere. It was identified as 'Shepherd' by the U.S. National Arboretum, Washington, D.C. in 1957 but this also seems unlikely since that cultivar is a male and our plants are heavy fruiting females. It probably is 'Hodgson', also known as 'Hodgsonii', a clone of 'Altaclarensis'.

'Integrifolia'
Wilmat Holly Co., Pa. (1950 plt.) Collection 3/54. 12 ft. tall. A very attractive female form with dark green leaves which are spineless, and bearing quantities of bright red berries. Also known as 'Rotundifolia'.

'Jan van Tol'
Kingsville Nursery, Md. (1948, plts.) Collection 10/49. About 11 ft. This form is most attractive in fruit with heavy clusters of large dark red berries but has a rather lax habit and is somewhat lacking in foliage.

'Laurifolia'
Wilmat Holly Co., Pa. (1950 plt.) Collection 3/54, moved 12/65. 10 ft. tall.

'Lichtenthal'
Wilmat Holly Co., Pa. (1950, plt.) Collection 11/57. 4 ft. tall. Also called **'Lichtenthalli'.**

'Marnock'
Wilmat Holly Co., Pa. (1950, plt.) Japanese Garden 11/62. Now 9 ft. tall.

'Pendula'
Kingsville Nursery, Md. (1952). Collection 11/57. 4 feet tall. A weeping form which may make a tight green mound if not trained upright.

'Pyramidalis'
Kingsville Nursery, Md. (1948 plts.) Collection 10/49. Average 10 ft. A female with many berries and nearly spineless large leaves. Not too different from some of the 'Altaclarensis' forms.

'Pyamidalis Compacta'
Wilmat Holly Co., Pa. (1950, plts.) Collection 11/50. 8 ft. tall. This seems to be little different from 'Pyramidalis'.

'Recurva'
Seattle garden (1945, plt.) Collection 3/49, again 11/52. Original plant 12 feet. Others average 7-8 ft. A male plant with small twisted leaves, very spiny and a compact habit.

'Rederly'
Cranguyma Farms, Wash. (1950, plt.) Collection 11/52. 11 ft. tall. An early coloring selection of the Brownell Holly Farms, Milwaukie, Ore.

'Scotica'
Wilmat Holly Co., Pa. (1950, plt.) Collection 12/54. Now a spreading plant 6 ft. tall by 8 ft. wide.

'Shepherd'
Wilmat Holly Co., Pa. (1950, plt.) Collec- 11/52. Now 9 ft. tall. This is often listed as 'Shepherdii', an 'Altaclarensis' form.

'Silvary'
Cranguyma Farms, Wash. (1950, plt.) Collection 11/52. 9 ft. tall.

'W. J. Bean'
Morris Arboretum, Pa. (1950, plts.) Collection 11/52; now about 14 ft. tall. This is a female with large spiny leaves and a vigorous growing habit.

'Whittington'
Wilmat Holly Co., Pa. (1950 plt.) Japanese Garden 11/62. 10 ft. tall.

'Wilson'
Kingsville Nursery, Md. (1948, plts.) Collection 10/49. Now 13 ft. tall. This is a rather tender female (leader killed 11/55) of the 'Altaclarensis' type. It may also be called **'Wilsonii'.**

'Zero'
Oregon State University, Corvallis, Oregon. (1958, plts.) Collection 12/65. 5 ft. tall. An Oregon selection with somewhat pendulous branches. Also called 'Teufel's Weeping'.

Ilex x **Aquipernyi** Krussman
(I. Aquifolium x **I. Pernyi)**
Kingsville Nursery, Md. (1948, plts.) Collection 10/49. A male plant, very vigorous, with shining leaves superior to *I. Pernyi,* about 16 ft. tall. Morris Arboretum, Pa. (1950 plts.) Collection 11/52 and 12/54, Japanese Garden 11/61. The first planted now about 8 ft. tall. The 1954 planting never developed a leader and is a spreading shrub. Both have larger leaves than the male plants and quantities of bright red fruit.

Ilex x **attenuata** Ashe (1924)
Arnold Arboretum, Boston, Mass. (1944, plts.) Collection 11/52; now 14 ft. tall. This plant is a natural hybrid between *I. opaca* and *I. Cassine,* found in Florida.

Ilex Cassine L. (1753)
Dahoon, S.E. U.S.A.
U.S.D.A. Bureau of Plant Introduction, Md. (1945, seeds). Collection 3/49, 10/49, 12/54. 5 ft. tall. A species which has never been really hardy with us.

Ilex centrochinensis C. China
Morris Arboretum, Pa. (1952, scions) Collection 3/57 and 11/57. 16 ft. tall. First fruited in 1963; these plants look very like *Ilex Pernyi* var. *Veitchii*. It is probable that it is wrongly named.

Ilex chinensis Sims (1819) China
Kyoto Botanical Gardens, Japan (1941, seed) Collection 10/49, again 3/60; Rhododendron Glen 11/62. Original planting about 22 ft. tall. This is a somewhat tender tree with entire foliage. Our plants have never flowered.

Ilex ciliospinosa Loes. (1911)
W. Szechuan, China
Clarke Nursery, Calif. (1945, plts.); Kingsville Nursery, Md., (1948, plts). Collection, 1945 plts., 3/49; 1948 plts. 10/49. Average 19 ft. tall. Our plants are males. They have slender yellow green leaves and an open lax habit.

Ilex cornuta Lindley & Paxton (1850)
Chinese Holly China and Korea
Mrs. F. C. Crummet, Chico, Calif. (1942, plts.). Collection 3/49. Armstrong Nursery, Calif. (1945, plts.). Collection 3/49, 12/50, and 11/52; Rutgers University, N. J. (1956, cuttings), Japanese Garden 4/61. The Chinese holly has never been successful in the collection and although there are plants ranging from 3 ft. to 6 ft. tall none are thrifty. The specimens in the Japanese Garden have done much better and are now healthy shrubs 3 to 4 ft. tall, fruiting well, evidently a hardier race.

'Burfordi'
Burford holly. Rutgers University, N.J. (1956, scions). Japanese Garden 11/61; now 2 to 3 ft. tall. This is an entire leaved female, very popular in the south east and California. Our plants are growing well.

'D'Or'
Ida Cason Callaway Gardens, Ga. (1959, plts.). Japanese Garden 5/63; now 2 ft. tall and spreading. A female form with either entire or 3-spined dark green leaves. It will have yellow fruit.

'Hitchcock'
Rutgers University, N.J. (1956, scions). Japanese Garden 4/61, 11/64. The latter planting now 2-1/2 ft. tall, foliage sparse probably because of the wet site.

'Rotunda'
U.S.D.A. Beltsville, Md. (1950, plts.). Japanese Garden, 5/63. Now 14 in. tall, a tight compact ball of very spiny leaves. These were moved from the collection when they were not in good condition and have improved since.

Ilex crenata Thunberg (1784)
Japanese Holly China, Japan, Korea
Private garden (1937, plts.). Bonnell Nursery, Renton (1949, scions). The former, planted 3/49, now a spreading shrub 7-1/2 ft. tall, the latter, planted 3/54, average 6 ft. tall.

'Convexa'
Arnold Arboretum, Mass. (1940, again 1941, plts.). Collection 3/49; now average 7 ft. tall; also by offices 4/52, now 5-6 ft. tall. This black fruited form with a spreading habit is ideal for a loose screen. Originated in Japan.

'Glass'
Kingsville Nursery, Md. (1948, plts.). Japanese Garden, 4/65, 8 ft. tall. Previously planted in the collection but moved.

'Helleri'
Private garden (1950, plt.). Collection 10/55, now 2 ft. tall. A tight dark green mound.

'Kingsville'
Kingsville Nursery, Md. (1948 plt.). Collection 10/49; now 18 in. tall. A dwarf, forming a dense cushion.

'Microphylla'
Kingsville Nursery, Md. (1948, plts.). Collection 10/49; now 10 ft. tall. This clone is reputed to be of low and compact growth. Ours is otherwise.

'Latifolia'
Heasley's Nursery, Pa. (1945, plts.). Collection 11/49; average 8 ft. tall. Kingsville

Ilex opaca 'Merry Christmas'
Fig. 14 Photo by: William Eng

Nursery, Md. (1948, plts.). Collection, 3/49, 10/49. 8-1/2 ft. tall. A loose growing form of slow growth and large leaves; also called 'Rotundifolia'.

'Mariesii'
Private garden, Seattle (1950, scions, 1955, plt.). Collection 10/55 and 11/55. Plants raised from cuttings now 5 ft. tall, the largest specimen received as a plant is 12 ft. tall. This is a female form with round leaves set on short twisted branches, also called 'Nummularia'. Of Japanese origin.

'Stokes'
Holden Arboretum, Ohio (1955, plts.). Collection 3/60. Now 1-1/2 ft. tall. This is another of the several compact forms of this species.

'Yellow fruit'
U.S. National Arboretum, Washington, D. C. (1959, scions). Collection 12/65; now 3 ft. tall.

Ilex dipyrena Wallich (1820) Himalaya Mts., W. China
Hillier & Sons, England (1954, seed). Collection 3/59; now only 4 ft. tall. A tender species that has been cut back in various cold winters.

Ilex geniculata Maxim. (1881) C. Japan
H. Kohankie & Sons Nursery, Ohio (1949, plt.). Collection 12/49, 11/57. The first planting is now 9 ft. tall, the latter is 5 ft. This is a deciduous species.

Ilex verticillata in fruit.
Fig. 15 Photo by: Don Normark

Ilex glabra (L.) Gray (1856) E. North America
Inkeberry. Local garden (1949, scions). Collection 11/52. Boyce Thompson Inst., Yonkers, N.Y., (1950, plts.). Collection 3/57. The former are now 4-1/2 ft., the latter 4 ft. tall. An evergreen or semi-evergreen species with normally black fruit.

'Leucocarpa'
White berried inkeberry. U.S. National Arboretum, Washington, D.C. (1961, plt.). Euonymus collection, 4/66; now 3 ft. tall. This may be what is referred to in the *National Horticultural Magazine* "Holly Handbook" as *I. g. luteo-carpa* F. W. Woods.

Ilex integra Thunberg (1784) Japan, Korea
Source unknown (1940, seeds). Collection, 3/49, now 13 ft. tall; male. Strybing Arboretum, San Francisco, Calif. (1958, scions); Japanese Garden 4/62, 5 ft. tall; 3/65, 6 ft. tall, female. A hardy species with shining entire leaves and an open habit.

Ilex laevigata (Dum. de Cours.) Gray (1856) Me. to Pa. & Va.
Winterberry. H. Kohankie & Sons Nursery, Ohio (1954, plts.). Collection 12/54. 3-1/2 ft. tall average. A deciduous species with orange-red fruit.

Ilex latifolia Thunberg (1784) Japan
City Park Nursery, Seattle, Wn. (1937, plt.). Collection, now 14 ft. tall; Bonnell Nursery, Renton (1941, scions), 3/49; now 10-14 ft. tall. This is a large-leaved tree species with thick and coarse foliage. The fruits are small and brick red.

Ilex macrocarpa Oliver (1888) C. China
Hillier & Sons Nursery, England (1955 plts.). Collection 2/59, 4/61; average 7 ft. tall. A deciduous sp. with black fruit.

Ilex montana T. & G. ex Gray var. **macropoda** (Miq.) Fern. (1939).
Kyoto University, Japan (1951, seed). Collection 11/57. 7 ft. tall. A deciduous holly, interesting because it is a Japanese variety of an American species.

Ilex opaca Aiton (1789) E. U.S.A.
American Holly. U.S.D.A., Glenn Dale, Md. (1945, seed). Collection 12/50; now 17 ft. tall. The American holly has a somewhat duller leaf than the English and often does not fruit as well. There are numerous clones, mostly of selections made in the east where it is hardier than *I. Aquifolium*.

'Arden'
Morris Arboretum, Pa. (1950, plt.). Collection 11/52; 11 ft. tall.

'Delia Bradley'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49; 8 ft. tall.

'Emily'
Morris Arboretum, Pa. (1950, plt.). Collection 11/52; 14 ft. tall. A wide spreading

plant lacking a distinct leader. Very attractive in fruit.

'East Palatka'
Kingsville Nursery, Md. (1948, plt.). Collection 3/60. (cuttings of original plants). Now 11 ft. tall. 'East Palatka' is apt to be damaged in a cold winter here, having originated in Florida. It has nearly spineless often yellowish leaves.

'Farage'
Kingsville Nursery, Md. (1948, plt.). Collection 10/48; 14 ft. tall. A female with shining dark green foliage.

'Hampton'
Kingsville Nursery, Md. (1948, plt.). Collection 11/52; 19 ft. tall. A good specimen.

'Hookstra'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49; 14 ft. tall. This is the same as 'Old Heavy Berry'.

'Howard'
Kingsville Nursery, Md. (1948, plt.). Collection 11/52; 3 ft. tall.

'Hume #1'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49, replanted 11/52. 14 ft. tall. This is a somewhat tender plant whose leaves are apt to be discolored by cold. It is in a site that is too shaded for good development.

'Laura'
Morris Arboretum, Pa. (1950, plt.). Collection 11/52; 6 ft. tall.

'Merry Christmas'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49; 20 ft. tall. This clone fruits very well for us.

'Maxwell Point'
Kingsville Nursery, Md. (1948, plt.). Collection 11/52; 18 ft. tall. A fine female specimen.

'Mrs. Santa'
Kingsville Nursery, Md. (1948, plt.). Collection 11/52; 12 ft. tall. An attractive female which fruits well here.

'Osa'
Morris Arboretum, Pa. (1950, plt.). Collection 10/53; 9-1/2 ft. tall.

'Richards' (P.I. 183818)
U.S.D.A. Plant Intro. Center, Glenn Dale, Md., (1950, plts.). Collection 11/52, 11/57, the latter now 11 ft. tall. A distinct female with fewer spines on the leaves than in many other *I. opaca* forms.

'Skookum'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49; 15 ft. tall.

'Tabor #3'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49; 11 ft. tall. Our specimen has an open habit and rather poor dull foliage.

'Trisco'
Kingsville Nursery, Md. (1948, plt.). Collection 10/49; now 9 ft. tall. Our plant has a thin, open habit and discolored foliage.

forma **xanthocarpa** Rehd. (1907)
Yellow berried American holly is represented by the two following clones:-

'Canary'
Mr. J. D. Rankin, N.C. (1958, plts.). Collection 12/65; 6 ft. tall.

'Helen Mitchell'
J. D. Rankin, N.C. (1958, plt.). Collection 12/65; 5 ft. tall.

Ilex pedunculosa Miquel (1866)
Japan, China
Longstalk holly. U.S.D.A., Beltsville, Md. (1937, plts.). Collection 3/49, now 17 ft. tall. There are several female plants and one male in the collection. It is a very hardy, good looking broad leaved evergreen with bright red fruit. Its leaves do seem to be subject to weevil damage.

Ilex Pernyi Franchet (1884)
C. to W. China
Perny holly. Private garden, Seattle (1945, plts.). Collection 3/49; 16 ft. tall. Plants with an open habit, long trailing branches and fruit hidden by the tightly clustered leaves.

var. **Veitchii** Bean (1914) China
W. B. Clarke Nursery, Calif. (1945, plts.). Collection 3/48; 15 ft. tall; again from Clarke's (1950, plts.) (as *I. aquipernyi* 'Brilliant'); Collection 11/52; now 13 ft. tall. This variety is sometimes called *I. bioritsensis* Hayata (1911). Dr. S. Y. Hu of the Arnold Arboretum identified our plants as var. *Veitchii*.

Ilex serrata Thunberg (1784) Japan
Mo. Bot. Gdn. (1954, plts.). Collection 11/57; 3-1/2 ft. tall. Similar to *I. verticilata*, deciduous.

var. **argutidens** (Miq.) Rehd. (1900)
Japan
New York Bot. Gdn. (1941, seed). Collection 3/49; 12 ft. tall. Differs very little from the type.

Ilex Sugeroki Maxim. (1881) Japan
U.S. National Arboretum, Wash., D.C. (1959, plt.). Collection 12/65. 4 ft. tall. Related to *I. yunnanensis* & *I. crenata*.

forma **longipedunculata** Maxim. (1881)
Japan. Kyoto Univ., Japan (1955, seed). Collection 12/65; now 6 ft. tall.

Ilex verticillata (L.) Gray (1856)
Black alder, E. & C. No. America
Crayton Nursery, N.C., & Forest Nursery, Tenn. (1940, plts.). Collection 3/49; both now average 9 ft. tall. New York Bot. Gdn. (1946, seed). Collection 12/50; average 8 ft. tall. This is a handsome free fruiting deciduous holly whose leaves turn a fine yellow in the fall and the bright red fruit holds well into the winter.

Ilex yunnanensis Franch (1889) W. China
Arnold Arboretum, Mass. (1940, plts.). Collection 11/52; now 11 ft. tall; Bonnell Nursery, Renton, (1954, plts.). Collection 4/54. Average 10-1/2 ft. tall. These are

tall growing plants with foliage similar to *I. crenata* but with sparse red fruit.

Ilex sp. (K.W. 21462)
Larson's Nursery, Tacoma, Wash. (1964, plt.). Rhododendron Glen, 3/66. 9 ft. tall. This plant was raised from seeds collected in N. Burma by Capt. Kingdon-Ward in 1953. It has not yet been identified.

The following three cultivars are very doubtfully named and appear to be forms or hybrids of *I. Aquifolium.*

Ilex perado var. **platyphylla**
Local garden (1948, scions). Collection 11/52, 3/54. The former is 11 ft. tall, the latter 7 ft. A handsome broad-leaved form with large fruit.

Ilex perado var. **balearica**
Kingsville Nursery, Md. (1948, plts.). Collection 10/49; now average 16 ft. tall. This clone has large tough shining green leaves.

Maderensis
Kingsville Nursery, Md. (1948, plts.). Collection 10/49; now 11 ft. tall.

The following are hybrids named or unnamed.

Ilex 'Foster'
U.S. National Arboretum, Washington, D. C. (1959, plt.). Collection 12/65; 5 ft. tall—thought to be *I. Cassine* x *opaca.*

Ilex 'Nellie R. Stevens'
U.S. National Arboretum, Washington, D. C. (1959, plt.). Collection 12/65; 5 ft. tall. Probably a cross between *I. Aquifolium* and *I. cornuta.*

Ilex 'San Jose hybrid' (**I. Aquifolium** 'Wilson' X **I. sikkimensis.**)
W. B. Clarke Nursery, Calif. (1956, plts.). Collection 3/61; 7 ft. tall. An open growing plant with large spiny leaves. Hardy here up to the present.

Ilex Cassine X **I. opaca**
Morris Arboretum, Pa. (1952, scions). Collection 10/56. Average 8 ft. tall. These plants have the same parents as *I.* x *attenuata* Ashe.

Ilex Fargesii hybrid
University of Agriculture, Wageningen, Holland (1949, seed). Collection 4/54; average 14 ft. tall; Rhododendron Glen 4/56; 14 ft. tall. This is a very interesting group of seedlings that show considerable variation. They are probably *I. Fargesii* crossed with *I. ciliospinosa,* since these grew near one another at Wageningen.

Ilex Pernyi X **I. cornuta**
Upper Bank Nursery, Pa. (1949, plts.). Collection 11/52; about 8 ft. tall. A vigorous plant with very spiny leaves.

Ilex rugosa X **I. integra**
U.S. National Arboretum, Washington, D. C. (1959, plt.). Collection 12/65; 4-1/2 ft. tall.

The following hollies are now growing in the nursery or lath house and may be placed out in the Arboretum in the near future.

Ilex Aquifolium
'Angustifolia Lilliput'
'Argentea Marginata Pendula'
'Atkinsonii'
'Denver Hardy'
'Donnington'
'Dr. Huckleberry'
'Ferox'
'Green Plane'
'Marginata Bicolor'
'Nobilis'
'Oregon Favorite'

Ilex crenata var. **fukasawana** Makino
var. **paludosa** (Naki) Hara
var. **mutchaqara** (Makino) Ohwi
'Cole's Hardy'
'Connors'
'Longfellow'
'Microphylla Nana'
'T-I'

Ilex decidua Walter

Ilex ? **insignis** Hooker

Ilex opaca 'Carrie'
'Red Velvet'

Ilex rotunda Thunb.

Ilex perado var. **platyphylla 'Nigrescens'**

Ilex 'Lydia Morris' (I. cornuta 'Burfordi' X **I. Pernyi)**

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Arboretum Foundation

(Continued from Page 9)

laxation, it will be a valuable asset to our area. Dedicated to the public use forever, it will help preserve the beautiful features of our region for succeeding generations. To carry this project through is a duty we owe ourselves, our children, and our children's children."

The officers of the Foundation are: George Tersiisky, President; Mrs. Jacob Wagner, 1st Vice President; Richard W. Hicklin, 2nd Vice President; Mrs. A. L. Timmermeister, Secretary; and Mrs. Karl Johnson, Treasurer.

Some of Our Favorites ☆

☆ Won't You Send Us Yours?

Pacific Madrone

(*Arbutus menziesii,* Pursh.)

In looking at past descriptions of "some of our favorites," I find that in many cases the species described were little known to our readers. While it is good to learn about new and/or rare species, we shouldn't overlook some of the outstanding trees and shrubs we have close at hand. One of these, which I find is a favorite of many people, is the *Pacific Madrone,* more commonly known locally as Madrona, and in British Columbia by its generic name, *Arbutus.*

It is probably the most widely distributed broadleaf tree found along the Pacific Coast, extending from the islands of British Columbia southward along the coast ranges of Washington, Oregon and California, and into the western Sierras in California.

While it is a favorite of many people because of its beauty, it is probably best known for its untidiness. When you have one or more of these trees in your garden, you find that they are always shedding something; flowers in the spring, leaves in the summer, fruit in the fall, and bark both summer and fall.

The late University of Washington professor and poet, Edwin H. Adams, was a strong admirer of the "Madrona." He had several in his garden and thoroughly enjoyed them. His feelings were so profound that he was inspired to write the following poem:

"I think that I shall never own a
Nicer tree than a madrona.
It's true its sweet is blent with bitter—
it sheds unconscionable litter;
All year it seems to come to pieces;
Disintegration never ceases.
Its leaves and berries won't stay on;
They clutter up my tidy lawn.
And through the months its sheds its bark.
But, then, my yard is not a park,
I sorta *like* to rake the lawn—
Besides, it cuts my embonpoint.
And what care I for raking duty
When I behold madrona's beauty,
In lacy, leafy pattern set
Against the sky, in silhouette.
Its lovely reds and yellows look
Like pages from a sunset's book;
Its strength, its dignity profound
Seem borrowed from old Puget Sound.
Oh tree, indigenous and native,
Symbolic and yet decorative,
You make me proud to be your owna—
Northwesternest of trees, madrona!"

Many visitors to the Pacific Northwest mistake the Madrona for a magnolia because of the similarity of the leaves. The leaves vary in length from three to five inches, are oval in outline and thick and leathery. They are dark, glossy green on top, greenish-white underneath, and persistent on the tree until the second summer, then dropping more or less continuously as the new leaves are formed. The flowers appear in April and May in pendent clusters; the individual flowers are white, small and more or less urn-shaped. From these flowers develop orange-red, round berrylike fruits which are eagerly sought after by many of our birds.

One of the outstanding features of the tree is its colorful bark which, on young stems and upper branches, is smooth, thin and bright red or orange or pea-green. On older trunks the green bark becomes dark reddish-brown, separating into small plate-like scales which peel off during the summer and fall.

While the tree may grow to be 80 or 100 feet tall and four to seven feet in diameter, one of its appealing features is its nonconformity in shape. It is frequently made up of many twisted, irregular stems which are more likely to lean rather than to stand erect. The crown varies from narrow, dense columnar shape in young trees, to broad and rounded in old trees. It reaches its best development along the coast and in the

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The Arboretum Bulletin

Vol. XXIX, No. 4 Seattle, Wash. Winter 1966

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To keep membership in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and The Bulletin will be discontinued.

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The Arboretum Foundation,
University of Washington Arboretum
Seattle, Washington

I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

Name .....

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All memberships are non-assessable.

Notes and Comment

An honor few individuals in the country receive was recently given to Mrs. Everett G. Griggs II, of Orting, Washington.

At the fall trustees meeting of Keep Washington Green, Mr. Jack H. Wood, assistant regional forester for the U. S. Forestry Service, presented Mrs. Griggs with a "Smokey Bear" award in recognition of her outstanding work in the field of fire prevention education.

Among her many affiliations, we are proud to note Mrs. Griggs has been a member of the Arboretum Foundation since 1953 and of its Board of Directors since 1962.

She is an honorary Washington State Forest Ranger and honorary member of the University of Washington College of Forestry Alumni Association, the only woman to be so honored.

The American Rhododendron Society is sponsoring a 21-day group tour in May 1967, primarily to visit many of the principal gardens and nurseries in England and Wales where rhododendrons are featured, concluding with the famous Chelsea flower show in London on May 23. The cost will be about $1,000.00 per person. For further information write Flora and Travel, Ltd., Glover & Co., 730 Fifth Ave., New York, N.Y. 10019.

Late in November the Arboretum received a gift of 70 different forms of Japanese maples from Mr. Rod Searles, Indianapolis, Indiana. Of these, 55 were of *Acer palmatum*, five of *A. japonicum*. This is largest number of such plants acquired since the original importations from Japan in 1940 and 1941, and forms a most welcome addition to our collection.

Pacific Madrone

(Continued from Page 99)

Puget Sound area where it is a characteristic tree, jutting out from, and hanging onto the cliffs above salt water, or silhouetted against the blue sky or an evening sunset.

The *Madrona* grows on a wide variety of soils, and on the poorer sites is shrub-like in character. It is resistant to drought, but not to severe cold which frequently kills the cambium layer on the lower trunk and eventually kills the tree.

Unfortunately, seedlings are not abundant and are hard to transplant, but if one does not mind its untidiness and your garden is not too small, the *Madrona* could be a most attractive specimen tree.

Gordon D. Marckworth

A Visit to the Santa Barbara Botanic Garden

(Continued from Page 92)

has been devised at the Garden. Labels with information typed and sealed between stiff sheets of plastic have been found successful. The Education Center offers classes to both children and adults. These classes are planned to challenge the curiosity of both young and old. Classes include Plant propagation, Plant identification, Spring wildflowers and Native plants for the garden. Volunteers help with a fall plant sale, packet seed for distribution, or work in the propagation center. Field trips are taken to points of interest.

A day spent at the Santa Barbara Botanic Garden is one to be remembered; an enriching experience for amateur or professional.

This is your Arboretum, kept alive by your support

We are pleased to welcome the following new members (August 16 through November 30, 1966): *Sustaining*—Mrs. T. W. Adams, Mrs. Jay S. Gage, Dr. and Mrs. Thomas A. Goodman, Mrs. Elizabeth Harisberger, Mrs. Philip J. Hobbs, Inverness Garden Club, Seaweeders Garden Club of Redondo. *Annual*—Mrs. Kenneth S. Allen, Mrs. John E. Anderson, Mrs. W. Dale Bauer, Mrs. James S. Bethel, Mrs. Donald M. Bucy, Mrs. L. F. Christofferson, Mrs. James C. Coons, Mrs. Paul W. Davis, Mrs. William L. Dubay, Mrs. Charles A. Duncan, Mrs. Joseph M. Dunn, Mrs. Curtis R. Eckberg, Mrs. Fred A. Ellis, Mrs. Gordon Fetters, Mrs. J. L. Findley, Mrs. Bruce Fisher, Mrs. T. Llyod Fletcher, Mrs. G. M. Gamwell, Mrs. Richard O. Gode, Mrs. Joshua Green III, Mrs. Miller Griffiths, Mr. and Mrs. Horace Harby, Mrs. Kenneth Hughes, Mrs. Marshall Hulbert, Mrs. Harry E. Jordan, Mrs. Douglas E. Kelly, Mrs. Curtis Lacy, David Lofgren, Mrs. Harold Luce, Mrs. V. H. Malone, Mrs. David B. McGaw, Mrs. Richard Mellon, Mrs. R. S. Menzies, Mrs. Robert W. Morris, Mrs. R. O. Myhr, Mrs. Eloise L. Nelson, Mrs. Clifford Noble, Mrs. Xenia Petkovits, Miss Sarah E. Rapalje, Mrs. Pauline Ringgold, Mrs. L. F. Schulze, Mrs. William Semmler, Mrs. Cleve R. Senecal, Mrs. Richard E. Shuler, Mrs. Jack F. Shunk, Mrs. J. B. Smith, Mrs. D. W. Snyder, Mrs. Von A. Sowers, Mrs. John W. Sterling, Mrs. Eugene B. Stilwell, Ruth M. Streit, Mrs. Ross Tabor, Mrs. D. M. Uhlrich, Mrs. A. T. Van Devanter, Mr. and Mrs. Donald R. Waters, Mrs. Robert F. Watt, Mrs. Walter D. Watt, Mrs. Crawford Wienker.

We are also grateful to the following who have increased membership dues: *Sustaining*—Fred M. Robbins.

BOOK REVIEWS

The Bulb Book by Paul Schauenberg. Frederick Warne & Co., Ltd., London, New York. $10.00.

The author covers thoroughly the fascinating subject of botanical families with one common characteristic—an underground food store. "The apparently lifeless bulb is a complete entity—not just a part of a plant—a root, a leaf, a flower, a seed." This is the wonder you will share with the author. Read every word in the chapter on biology, geography, history, and scientific aspect. Browse again and again through the chapters on various uses of bulbs, forcing, propagation; study those on cultivation, pests and diseases. Identification is made easy by 94 drawings of the bulbs themselves. Part Three is the alphabetized list of Genera and Species in cultivation with complete, but very readable, information on each. 36 full page photographs and 50 drawings are superb! M. W. B.

A Guide to Seedling Identification for 25 Conifers of the Pacific Northwest by Jerry F. Franklin. 65 pp. Pacific Northwest Forest and Range Experiment Station, U. S. Forest Service, Portland, Oregon. 1961.

Identification of seedlings of tree species has always been most difficult and as a result has often been neglected. Mr. Franklin's publication brings together a substantial amount of previously scattered information and adds much new and valuable material. It contains a well-conceived, usable, and simple key, as well as detailed species descriptions for seedlings of 25 western conifers. Thoughtfully, it is published in a convenient size to be carried in one's pocket. As a forest ecologist, I have found it of considerable value. I am sure that anyone having an interest in either field or garden seedling identification will also discover this book to be most useful. David R. M. Scott

"The Principles of Pollination Ecology," K. Faegri & L. van der Pijl. Pergamon Press (Toronto-Oxford - London - Edinburgh - New York - Paris - Braunschweig), 1966:248 pp., 51 figures. Price $9.50.

This excellent book—a "must" for any biology teacher worth his salt, and for any serious student of pollination, plant ecology and evolution—is the product of a felicitous collaboration between two authors who have shown their mettle on various previous occasions. Both favor an approach which is experimental and dynamic as well as descriptive, and the rich personal experiences upon which they can draw are complementary in more than one sense: while van der Pilj is, perhaps, best known for his pioneer work on bat pollination, tropical flower ecology and floral timing-mechanisms, Faegri has distinguished himself in the study of the Norwegian flora, palynology, plant geography and taxonomy. The biological acumen, scholarship and erudition of the authors, and their critical (but by no means intolerant!) attitude are evident on every page. The book is well-organized, and in general the authors have succeeded in avoiding, on the one hand, repetitiveness, and, on the other, the sudden introduction of concepts not previously defined. The coverage is gratifyingly complete, so that one can find in the book (a.o.): a short history of the field; techniques to be used; pollination seen within the wider framework of spore dispersal; the various types of pollination; pollination-ecology and speciation; and applied (i.e., practical) pollination ecology. About 50 "case histories" are presented, illustrated with drawings. The bibliography covers some 350 well-chosen items. Particularly useful features are, furthermore, the separate index of plant names and that of animal names. The number of barbarisms in the book is surprisingly small; moreover, rather than detracting from its value, they lend it a special flavor. A serious drawback of the book, however, and one which may well hamper the wide distribution we wish upon it, is the price: $9.50! For such a sum, the publishers could well have afforded more or better proofreaders, as well as the drawings of which the first part of the book is completely devoid, although it is just as worthy of them as the part covering the case-histories.

For the rest, one can say that the book has "les defauts de ses qualites." Definitely, it is not a book for beginners. In the index, the authors sell themselves somewhat short, failing to mention (sometimes) text-items on which they themselves have done meritorious work! Finally, the authors' keen perceptiveness to the existence of problems may conceivably have led them to needless worries in some cases, e.g., in their consideration of the various types of flower-scents (odors with "direct" versus those with "indirect" effect). Here, one suspects a situation comparable to the one encountered in the study of mimicry, where the Mullerian and the Batesian type can be recognized (or postulated?) as extreme cases, but also as marvelous conceptual springboards for a discussion leading to the insight that most cases in nature are not so clear-cut!

All in all, a book which, in the hands of a good teacher or reader, can make biology fantastically alive. B. J. D. Meeuse.

CORRECTION: The Summer issue, 1966, carried a book review by Dr. Meeuse without a title. Our apologies and the belated title:

Flowers of the Mediterranean by Oleg Polunin and Anthony Huxley. Chatto & Windus, London. Price 42 s.

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